PA970 Portable Terminal
User's Manual

unitech

unitech PA970 User's Manual

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NOTICE

This unit is equipped with a battery pack and backup battery. It is possible that the Unitech PA970 may not immediately power-on due to battery discharge as a result of storage.

In the above situation, plug the PA970 to the RS232 or USB cable, or place the unit into the Unitech PA970 Cradle (with 12V/2A AC-DC adapter, part number 1010-601478), and recharge the unit for 16 hours in order to fully charge its backup battery.

The backup battery will charge from external power or the main battery if the main battery still has enough power to turn on. In the event the main battery is fully charged, refrain from using the PA970 for 16 hours in order for the main battery to fully charge the backup battery.

Backing-up data via backup battery only (without the main battery installed) may take as long as 4 hours. Therefore, in order to prevent data loss due to backup battery failure, do not leave the PA970 without the rechargeable battery pack installed or without connection to AC power for an extended period of time.

Chapter 1. Introduction

Thank you for purchasing the Unitech PA970.

Your PA970 is a rugged, compact, and lightweight palm-size mobile computer. It utilizes the Windows CE.NET operating system, and incorporates an integral bar code scanning laser device, color LCD with touch screen, keypad, built -in GSM/GPRS, 802.11b, and SD Card Bluetooth® communication capability.
This PA970 product reference guide will guide you in your use of your PA970.

PA970

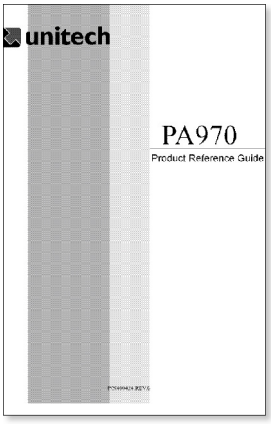
Unitech PA970 & Accessories

After opening the PA970 box, please make sure the following items are present:

PA970 Main Unit

User Guide CD

Battery Pack



Quick Reference Guide

Stylus

Tour of the Unitech PA970

First Steps with the Unitech PA970

There are three ways to provide power to the PA970:

- Rechargeable Lithium-Ion battery pack
- RS232/Charging cable or USB/Charging cable
- Docking Station

Note: *Data you enter may not be properly stored until the built-in backup battery has been adequately charged. Please remember to turn on the back-up battery before you charge the terminal.*

Installing the Battery Pack

1. Remove the battery compartment door using the flip-out battery compartment latches located on the bottom of the PA970.

2. Position the battery pack with the recessed contacts towards the bottom right side of the battery (to line up with the battery contacts in the battery compartment). Insert and fully seat the battery pack, making sure the shape of the battery compartment fits the shape of the battery compartment.

3. Re-attach the battery compartment door with the battery compartment latches.

Charging the Main and Backup Batteries for the First Time

IMPORTANT! **Before charging the PA970's batteries for the first time, refer to page 13 in this manual or page 1 of the QuickStart Guide. This PA970 arrives from the factory with its Backup Battery Switch in the OFF position. In order to charge and activate the Backup Battery, its switch must be in the ON position. Otherwise data can be lost if the Main Battery shuts down or is removed.**

After insuring that the Backup Battery Switch is indeed in the ON position, follow the steps below to charge your PA970's batteries. Please note that the first time charge of the PA970 might take up to 16 hours.

Supplying Power to the PA970

Connect the RS232/Charging Cable or USB/Charging Cable between the PA970 and your PC, and then connect the AC adapter between the cable's power jack and an electrical outlet.

Or place the PA970 into the Docking Station, after connecting the power supply between an electrical outlet and the Docking Station.

Using the Stylus

CAUTION: Never use anything other than the PA970's stylus on the screen. Using another object as a stylus could cause permanent damage.

1. Hold the stylus as you would a pencil.
2. To make a choice from a menu, lightly tap the tip of the stylus on that choice.
3. To write data into a field on a form, use the stylus to print the letters or numbers. Use very light pressure.

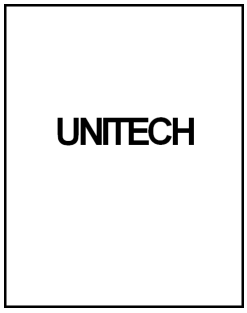
Protective Screen Film

The PA970 screen ships with a protective plastic film. You may remove this if desired by peeling from one corner. The screen will be more susceptible to scratching without the film, but will be more readable, and the touchscreen will work better.

First Operation of the Unitech PA970

Press the ON/OFF Key

The Unitech PA970 welcome screen appears. The Windows CE® screen will appear shortly thereafter.



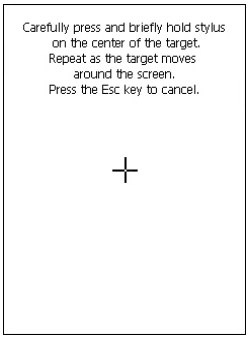
Adjust Screen Brightness

Press [FUNC] key and *Cursor* key to increase or increase screen brightness.

Calibrate the PA970

This screen will automatically appear when the unit is powered-on for the first time or after the system is reset. This screen can also be accessed at any time by pressing the hot key [FUNC] and the [ESC] key.

The PA970 will prompt you to calibrate the unit by tapping a sequence of screen locations. Tap gently but firmly. When you have completed the series of taps, press the [ENT] key to confirm it or press the [ESC] key to cancel it.


Carefully press and briefly hold stylus
on the center of the target.
Repeat as the target moves
around the screen.
Press the Esc key to cancel.

Setting Time Zone, Date, and Time

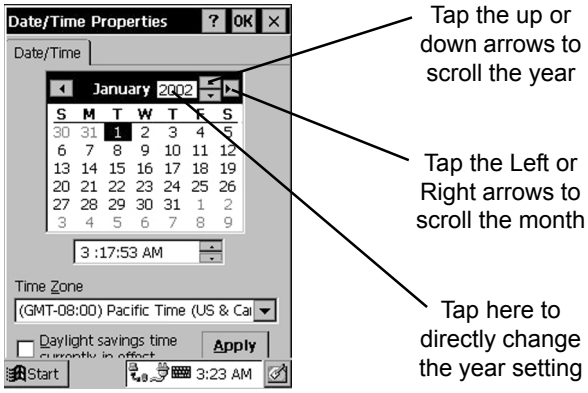
After Calibrating the PA970, the “Date/Time Properties” dialog box will appear. Follow the steps below to set the date and time.

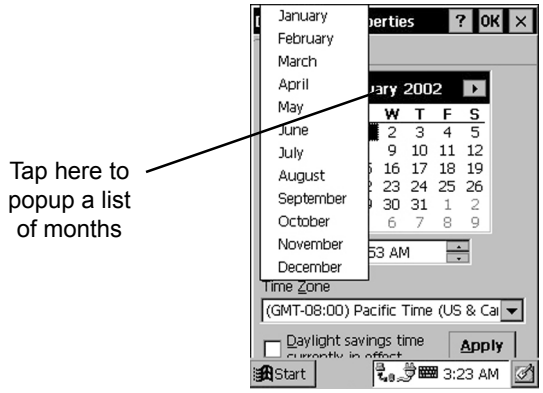
Setting the Time Zone first

Follow the steps below to set up your time zone.

1. Tap the location arrow to see a list of cities.
2. Choose your location (or nearest listed one).
3. Select the *Daylight Savings Time* check box, if necessary.
4. Tap the *Apply* button.

Setting the Year and Month



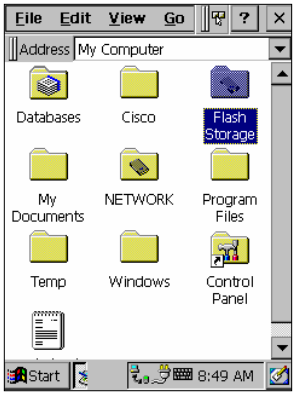


Exiting Date/Time Properties Settings

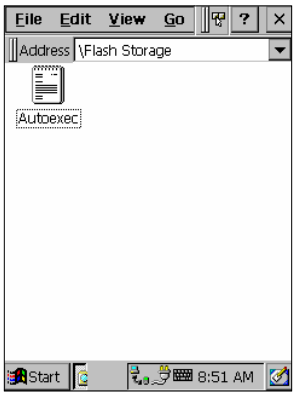
Tap OK or the X (cancel) button at upper-right corner to exit.

Flash Memory

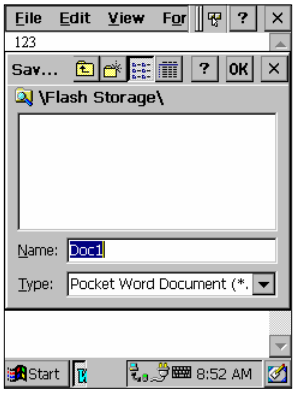
Flash Memory is a re-writable location in which to store up to 64 MB of programs and data files. The benefit of this feature is that files and programs saved in Flash Memory are unaffected by the PA970's power status.



To access the contents of Flash Memory, simply select *My Computer* on the desktop and then select *Flash Storage*. The programs and data files currently stored in Flash Memory will be displayed.



To save to Flash Storage, select *File*, *Save To*, and select *Flash Storage* just like you would select any other storage medium.



Chapter 2. Using the Keypad and Scanner

Keypad

The PA970 keypad contains 19 keys, including:

- Esape key
- Cursor key
- Enter key
- Backspace key
- ON/OFF key
- Tab key
- Function key
- 0~9 numerals
- Alpha key
- Decimal Point key

Please refer to the picture to the right.

ON/OFF	When the unit is off, pressing the ON/OFF key will turn the unit on. Alternatively, when the unit is on, this key must be pressed and held down for about two seconds in order to turn the unit off.
[ESC]	The Escape key will perform the same function as tapping the CANCEL button or the **X** icon on the touch screen.
[Back space]	The Backspace key is used to erase previously input characters.
[FUNC]	The Function key is used to perform alternative key functions.
[TAB]	The Tab key is used to toggle between data fields or to place the cursor at pre-determined places in a programming or word processing application.
[ENT]	The Enter key is used to initiate a process or confirm a selection made by the user.
[Cursor]	The Cursor key is used to navigate among applications.
[Alpha]	This Alpha key is used to toggle between Numberic and Alpha Mode. This Apha key is also used to toggle CAPS in Alpha Mode.

Alpha Key

When the PA970 boots, the default condition is Numeric Mode on.
When the Apha Mode is toggled on, the default condition is CAPS mode off.

Alpha Mode Press Alpha for alpha mode, the default condition is CAPS off.

CAPS Press the Alpha key twice to toggle CAPS

Key in Press the Cursor-UP to select a character.

Useful Hotkeys

The PA970 provides eight combination hot keys to activate specified screen setting functions or programs. These hotkeys are useful for calibrating the touch screen, toggling the backlight, and adjusting screen contrast when the menu-driven operation is disabled. Below is the list of hotkeys. To use them, press and hold the [FUNC] key in combination with the corresponding second key.

[FUNC] + [ESC]	Check stylus properties & re-calibrate the PA970's touch screen
[FUNC] + [ ]	Decrease screen brightness
[FUNC] + [ ]	Increase screen brightness
[FUNC] + [TAB]	Toggle screen & LCD backlight
[FUNC] + [6]	Task manager
[FUNC] + [7]	Scanner Setting.exe
[FUNC] + [8]	Power Properties
[FUNC] + [9]	System Information
[FUNC] + [0]	Space
[FUNC] + [ ]	Toggle keypad brighter
[FUNC] + [ ]	Toggle keypad dimmer

Software Keyboard (Windows CE Keyboard)

Since the PA970's keypad allows input of numeric characters only, the Windows CE Software provides a touch screen keyboard for input of other characters. The Windows based keyboard replicates the layout of a standard PC keyboard.

Opening the Windows CE Keyboard:

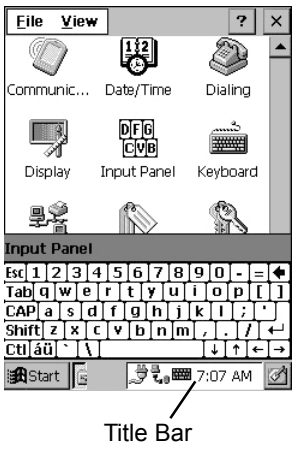
The Windows CE keyboard can be opened by tapping the keyboard icon on the task bar. (Refer to picture at right).

Keying-in Characters:

After tapping the "keyboard" icon, the Windows CE keyboard pops up. Character input is the same as on a standard PC. Simply tap the on-screen button corresponding to the character you want to input.

International Character Support:

Tap the [áü] button to switch from the standard English keyboard to the European keyboard.



Moving the Keyboard:

Use the stylus to point to the title bar (the bar displaying "Input Panel") and then move the stylus without lifting it from the screen.

Closing the Keyboard:

Tap the keyboard icon to close the Windows CE keyboard.

Using the Laser Scanner

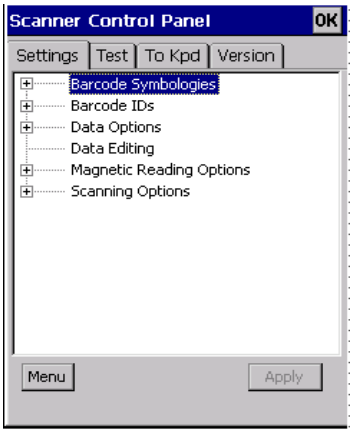
Note: Reading software must be enabled in order to operate the scanner. This can be a user-loaded application or a pre-loaded utility such as Scanner Setting.exe.

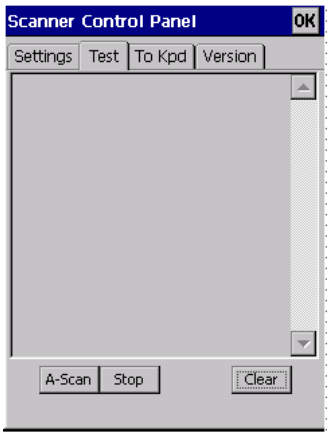
Laser Scanner

The PA970 has an integrated laser scanner, which reads all major bar code labels with excellent performance.

Trigger keys are located on the left and right sides of the unit. Press either one to activate the laser scanner.

The PA970 also has a built-in Scanner Setting.exe program that allows the user to test the barcode scan function. Scanner Setting.exe is located in directory \Windows\Control and is also accessible by shortcut via “Setting\Control” on the Start menu.

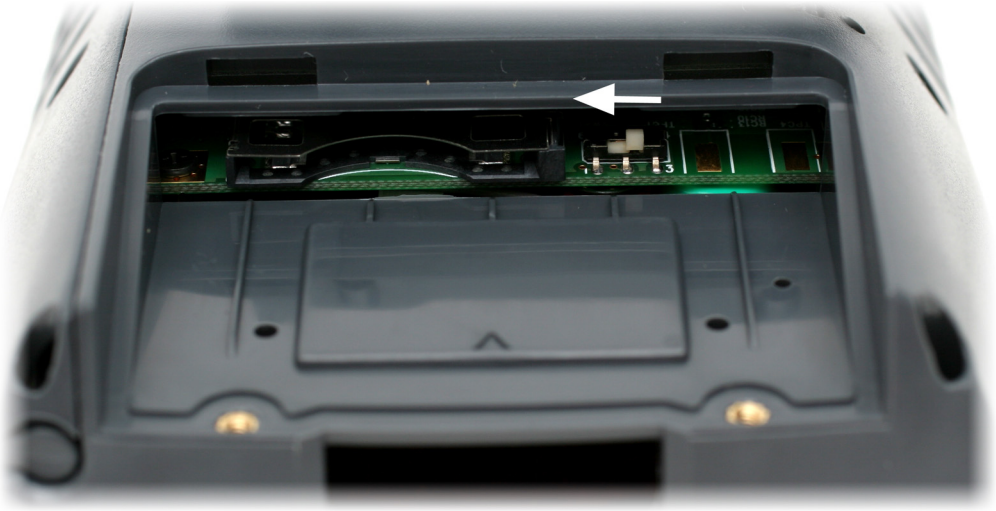




Chapter 3. Power System

IMPORTANT!

The PA970 arrives with its Backup Battery Switch in the OFF position.
Before charging your PA970's batteries, open the SD Card Compartment (see page 3), locate the Backup Battery Switch (see below) and move the Backup Battery Switch to the ON position (toward the stylus slot). Otherwise data can be accidentally lost in case of Main Battery shutdown or removal. Conversely, switch the Backup Battery Switch to the OFF position for long-term storage.



Charging the Lithium-Ion Battery Pack

The optional Docking Station is a convenient accessory for daily use of the PA970. Charging the battery pack using the Docking Station takes approximately 3 hours.

Or, when using the included Charging/USB cable or Charging/RS232 cable, the charging time of the battery pack is also about 3 hours.

Charging the Main and Backup Battery for the First Time

Note: Before using the PA970 for the first time, charge the unit for 16 hours to fully charge the empty backup battery. Operating the PA970 for the first time without the AC adapter, and without fully charging the backup battery may result in loss of data stored in RAM memory.

Note: Backing-up data by backup battery only, without the main battery installed in the battery compartment, may take as long as 4 hours. Therefore, in order to prevent data protection failure due to backup battery failure, do not leave the PA970 without the rechargeable battery pack installed, or without connection to AC power for an extended period of time.

It may take up to 96 hours to backup data when the PA970 is automatically shut down because of very low battery power while the depleted batteries are still installed in the battery compartment.

Power Status Indication

Four different icons are displayed on the status bar to indicate the on-board power status.

"Plug" icon: When displayed, this icon indicates that the battery is charging. The PA970 is either plugged-in via the DC 12V/2A power adapter or in the docking station.

Plug with power adapter

"Battery Low" icon: When displayed indicates the battery is low and needs to be charged. In other words, there is no external power supply, the battery charge is low or very low, and charging the PA970 is recommended.

Battery Low

"Battery Very Low" icon: When displayed indicates the battery is very low. Stopping the operation and charging the PA970 immediately is highly recommended.

Battery Very Low

No icon: When displayed means there is no external power supply to the PA970 but its battery power status is good.

"Backup Battery Low" icon: When displayed indicates the backup battery is low and needs to be charged.

Backup Battery Low

"Backup Battery Very Low" icon: When displayed indicates the backup battery is very low. Stopping the operation and charging the PA970 immediately is highly recommended.

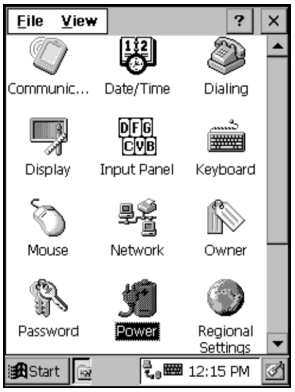
Backup Battery Very Low
or Backup Battery is not turned on.

Checking Main and Backup Battery Status

Enter Power Properties:

If the above mentioned Plug icon or Battery icon is displayed, double tap this icon to display the *Power Properties* screen.

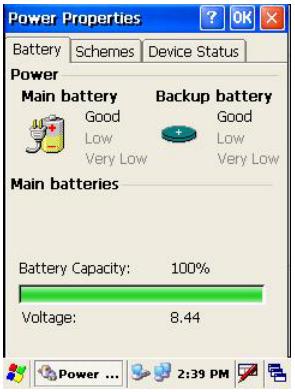
Or, select *Settings/Control Panel* from the Start menu and then double tap the Power icon to display *Power Properties*.



Check Battery Status:

The battery menu item will show the status of the main and backup batteries. There are 3 kinds of status indicators — “Good”, “Low” and “Very Low”. Bold characters indicate the actual status - e.g. battery icons in the illustration at right mean both the main and backup batteries are “GOOD”.

It is necessary to charge the battery when “Low” or “Very Low” are displayed in bold characters. If “Low” or “Very Low” are still displayed after charging, please contact Unitech Technical Support.



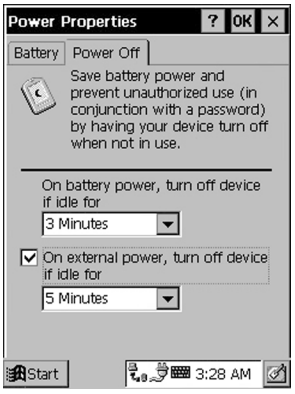
How to Save Battery Power

Automatic shut-down of the PA970

The PA970 will enter Idle Mode when there is no task, or all tasks are waiting for input. In default setting, the PA970 will automatically go to sleep if it remains idle for longer than 3 minutes and when there is no external charging power applied. Pressing the power button will return the PA970 to the same point at the time of automatic snooze.

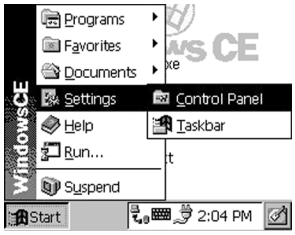
In Power Properties, select “Power Off”. Customize automatic shut off time by tapping the arrow to select from a list of time periods. The available time periods are 1, 2, 3, 4, and 5 minutes.

This function can also be activated when the PA970 is plugged into the power adapter or placed in its cradle by tapping the check box and then tapping the arrow to select from a list of time periods. The available time periods are 1, 2, 5,10, 15 and 30 minutes.


Power Properties
Battery
Power Off
Save battery power and prevent unauthorized use (in conjunction with a password) by having your device turn off when not in use.
On battery power, turn off device if idle for
3 Minutes
On external power, turn off device if idle for
5 Minutes
Start
3:28 AM

Backlight Setting

Because the power consumption of the LCD backlight is high, turn off the backlight function if it is not necessary. If a backlight is required, select the “automatically turn off the back-light” function.

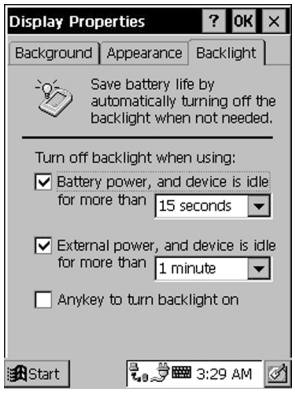


To change backlight settings, select *Settings / Control Panel* from the Start menu, and then double tap the *Display* icon.

Tap the “Backlight” menu item to display the following three selections:

Automatically turn off the backlight when using battery power:

Tap the check box to toggle this function. Available idle times are: 15 and 30 seconds; and 1, 2, and 5 minutes.



Automatically turn off the backlight when using external power:

Tap the check box to toggle this function. Available idle times are: 15 and 30 seconds, and 1, 2, 5, 10, 15, and 30 minutes.

Automatically turn on the backlight when any key is pressed:

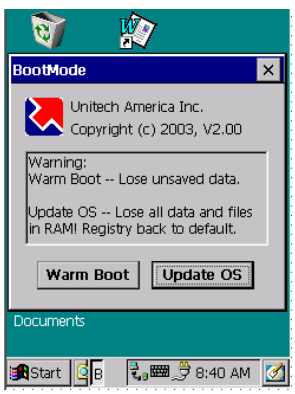
This function is activated by the PA970’s keypad rather than the Windows CE keyboard.

Warm Boot / Cold Boot

Warm Boot

- **Via Hardware:** To perform a warm boot while the PA970 is operating, insert the end of an unfolded paperclip into the reset hole on the back of the terminal, right below the SD Card compartment cover.
- **Via Software:** Under the Windows folder of your terminal, locate the file BootMode.exe, execute the program, and confirm the warning message.

  WARNING: Warm Boot will cause unsaved data to be lost.



Cold Boot

- To perform a coldboot, press the coldboot button inside the SD Card compartment.

WARNING: Cold Boot will cause the PA970 to return to its original factory settings.

Charging Considerations

It is important to consider the environment temperature whenever you are charging the Lithium-Ion battery pack. The process is most efficient at normal room temperature or slightly cooler, and it is essential that you charge batteries as close to this range as possible. Charging batteries outside of this range could damage the batteries and/or shorten their charging life cycle.

Storage and Safety Precautions

Although charged Lithium-Ion batteries may be left unused for several months, their capacity may be depleted due to build up of internal resistance. If this happens they will require recharging prior to use. Lithium-Ion batteries may be stored at temperatures between -4°F to 140°F (-20°C to 60°C), however they may be depleted more rapidly at the high end of this range. It is recommended to store batteries within normal room temperature ranges.

Chapter 4. Communication

Introduction

The Unitech PA970 allows users to link to a host computer via RS-232,USB, IrDA, or RF connection for data communication.

This chapter provides an overview of the communication methods of the PA970. The following subchapters cover these topics:

- ”Microsoft ActiveSync” details serial communication via RS232/ USB port.
- “RF Communication” details wireless communication between mobile PA970 and host computers.

Connecting

Serial or USB Cable

Plug the RS232 or USB end of the communication/charging cable into the appropriate PC port, and the other into the PA970’s charging/communication port (see page 3). Plug the power supply between a wall socket and the power receptacle on the RS232 or USB plug.

Docking Station

Plug the RS232 or USB end of the communication/charging cable into the appropriate PC port, and the other end into the PA970 Docking Station’s communication port. Plug the power supply between your wall socket and the power receptacle on the Docking Station.

ActiveSync

In order to exchange data between your desktop computer and the PA970, Microsoft ActiveSync must be installed on your desktop computer.

With Microsoft ActiveSync you can:

- Transfer data
- Back up and restore PA970 data
- Add programs to and remove programs from the PA970

This chapter will introduce Microsoft ActiveSync version 3.5. ActiveSync provides a user-friendly interface, and it can be downloaded free of charge from Microsoft's Web site.

Installing Microsoft ActiveSync

Before beginning installation, carefully read the following:

- Because you will be restarting your computer during installation, save your work and quit all programs before you begin.
- To set up your communication settings, a PA970 serial cable is required to connect the PA970 to your host computer.
- If you run the Windows NT® operating system with a service pack, you will be informed during setup that you may need to reinstall the service pack. Try connecting first, and if unsuccessful, reinstall the latest service pack.

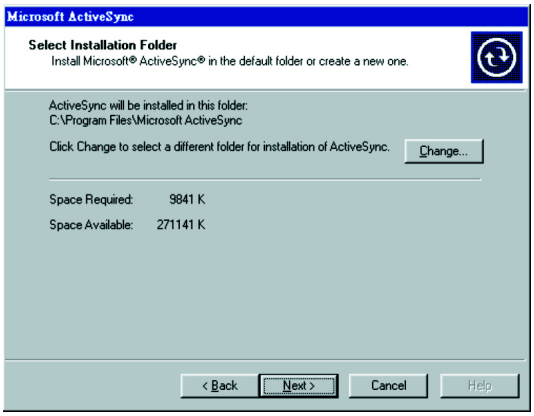
Installation

Follow the installation procedure below to install Microsoft ActiveSync, connect your PA970 to your desktop computer, and establish a partnership for synchronization (if desired):

- Download the executable program "msasync.exe" from the Microsoft web site at: http://www.microsoft.com/mobile/pocketpc/downloads/activesync35.asp. Execute this program.

Microsoft ActiveSync
Set Up MicrosoftR ActiveSyncR 3.5
Before you can exchange information between your mobile device and this computer, you must set up ActiveSync.
This setup wizard will guide you through:
Installing the ActiveSync program on this computer
Setting up your mobile device
Note: It is strongly recommended that you exit all Windows programs before continuing with this setup wizard.
Click Next to continue with the setup process. Click Cancel to quit setup.
< Back
Next >
Cancel
Help

- Select the folder into which Microsoft ActiveSync will be installed. If you choose to download into a folder other than the displayed default folder, click the *Change* button.


Microsoft ActiveSync
Select Installation Folder
Install Microsoft® ActiveSync® in the default folder or create a new one.
ActiveSync will be installed in this folder:
C:\Program Files\Microsoft ActiveSync
Click Change to select a different folder for installation of ActiveSync.
Change...
Space Required: 9841 K
Space Available: 271141 K
< Back
Next >
Cancel
Help

- After you've selected the appropriate folder, click *Next* to set up Microsoft ActiveSync. After you've installed Microsoft ActiveSync and restarted your computer, you'll see the following screen:

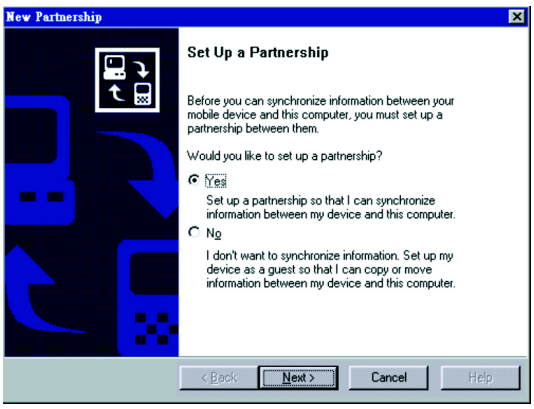
Get Connected
Get Connected
After installing batteries or plugging in the AC adapter, do one of the following:
* Use the serial cable to connect to a COM port on the back of this desktop computer and click Next.
* Use the USB cable to connect to the USB port on the back of this desktop computer. ActiveSync will automatically detect the device connection.
You can also connect your mobile device using infrared (IR). For more information, click Help.
< Back
Next >
Cancel
Help

- Plug the PA970 into a RS232 or USB communication port on your desktop computer with the PA970's communication cable (see page 18).

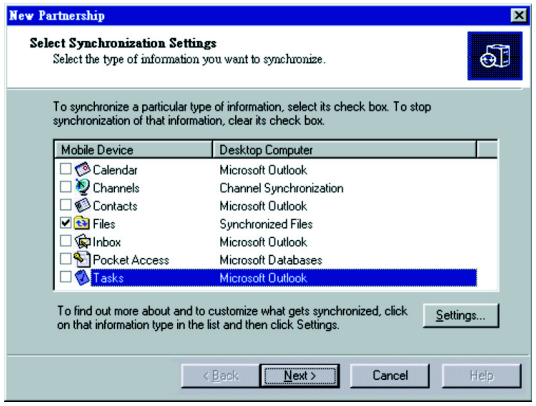
- Turn the PA970 on. Click the *Next* button.

- Microsoft ActiveSync should recognize your PA970 and configure your communication port. If a message appears indicating that it is unable to detect a connection, click the *Cancel* button and manually configure the communication settings. For more information, see "Change Communications Settings" later in this chapter.

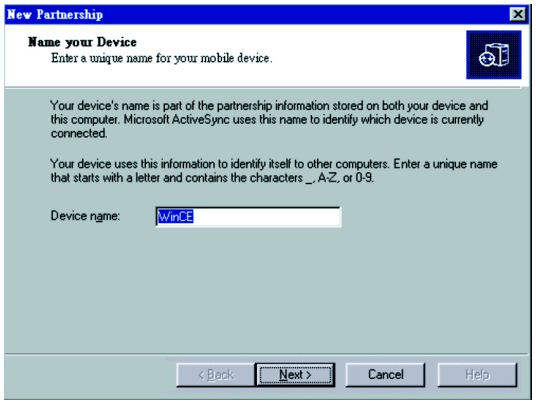
- When the PA970 is initially connected to a host PC, the following screen appears prompting you to set up a "Partnership". Setting up a Partnership is required if your PA970 is to be synchronized with other computers and/or terminals. Otherwise select No.


New Partnership
Set Up a Partnership
Before you can synchronize information between your mobile device and this computer, you must set up a partnership between them.
Would you like to set up a partnership?
Yes
Set up a partnership so that I can synchronize information between my device and this computer.
No
I don't want to synchronize information. Set up my device as a guest so that I can copy or move information between my device and this computer.
< Back
Next >
Cancel
Help

- Now select synchronization settings. Currently the PA970 can support “Synchronized Files”

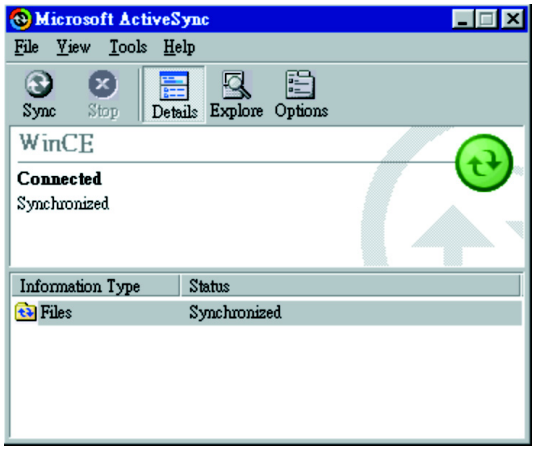


- Different PA970s cannot share the same Device Name if more than one terminal is to be connected to the same PC via a “Partnership”. The default Device Name assigned to the PA970 is “WinCE”. It is important to specify a different name for each terminal if more than one terminal is to be connected to the same PC. When ActiveSync displays the following screen, assign each terminal its own unique name.


New Partnership
Name your Device
Enter a unique name for your mobile device.
Your device's name is part of the partnership information stored on both your device and this computer. Microsoft ActiveSync uses this name to identify which device is currently connected.
Your device uses this information to identify itself to other computers. Enter a unique name that starts with a letter and contains the characters _, A-Z, or 0-9.
Device name:
WinCE
< Back
Next >
Cancel
Help

- Click the *Next* button and follow the instructions to set up a partnership between the PA970 and your desktop computer.
  This partnership allows you to synchronize information between the two computers.

- When the configuration process is complete, you’ll see the screen to the right:

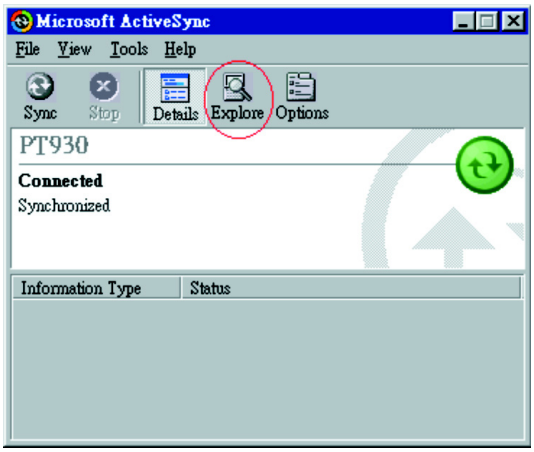


Synchronization will be initialized and will take place if you’ve chosen to synchronize periodically or upon connection.

Note: Your desktop computer can create a partnership with an almost unlimited number of PA970s. However, a single PA970 can create a partnership with up to two desktop computers.

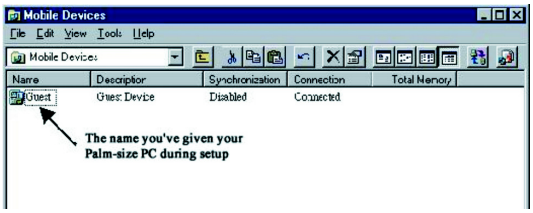
Using the Mobile Devices Window

- Start Microsoft ActiveSync by clicking the *Microsoft ActiveSync* shortcut on your desktop and then clicking the *Explore* icon.

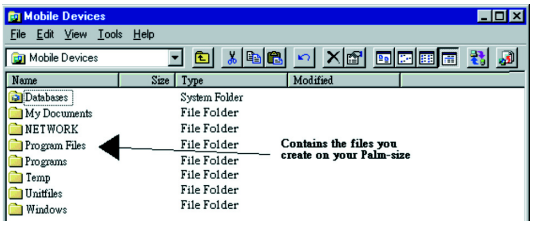


Mobile Devices Features

- Select your PA970 to use Microsoft ActiveSync features such as changing synchronization options, as described in the Synchronization section (starting page 24).



- Open the Explorer window by double-clicking your device icon in the Mobile Devices window.
  Use this window, which is the root window to the PA970, to copy and move files between the PA970 and your desktop computer, as described in the "Synchronization" section (starting page 24).

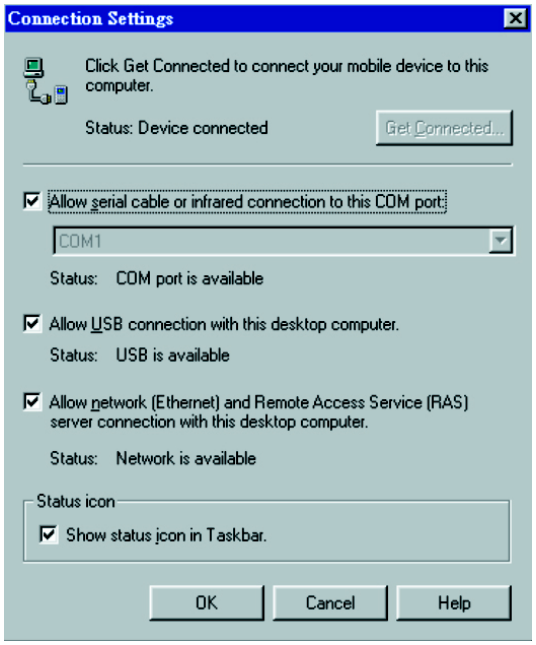


Changing Communications Settings

If Microsoft ActiveSync fails to detect the PA970 during installation, set up communications manually instead. Make sure the following conditions are met:

- Verify that the correct communications port is selected for your desktop computer and that it is free.
- Microsoft ActiveSync uses the specified communication ports to connect to the PA970. Make sure these resources are available for Microsoft ActiveSync to connect to the PA970. Other programs cannot use them while the PA970 and your desktop computer are connected.
- Set your baud rate on the PA970 - the desktop computer will match it.

To check communications settings, open the Mobile Devices folder, and click *File / Connection Settings*. The baud rate on the PA970 is set to 57600bps by default. To adjust the baud rate, tap *Start, Settings, Control Panel,* select the *Communication icon,* select the *PC Connection* tab, and then tap the *Change Connection…* button.
For more information see Microsoft ActiveSync Help.


Connection Settings
Click Get Connected to connect your mobile device to this computer.
Status: Device connected
Get Connected...
Allow serial cable or infrared connection to this COM port:
COM1
Status: COM port is available
Allow USB connection with this desktop computer.
Status: USB is available
Allow network (Ethernet) and Remote Access Service (RAS) server connection with this desktop computer.
Status: Network is available
Status icon
Show status icon in Taskbar.
OK
Cancel
Help

To change the terminal's default baud rate or to use IrDA to communicate with the Host PC, follow the steps below to make modifications:

1. Tap *Start, Settings, Control Panel, Communications*
2. Tap the *PC Connection* tab
3. Tap the *Change Connection* button
4. Select the baud rate from the list box

Synchronization

Synchronizing information between your PA970 and your desktop computer will insure both computers have current information. First you'll need to install Microsoft ActiveSync on your desktop computer.

Synchronization takes place according to the options you chose during Microsoft ActiveSync setup. If you accept the default (On Connect) synchronization option in the Microsoft ActiveSync Setup Wizard, you'll be able to simply connect your PA970 to your desktop computer, and synchronization will automatically take place.

If you have not enabled *On Connect*, start Microsoft ActiveSync in either of the following ways:

- On your desktop computer, double-click the My Computer icon and then double-click the Mobile Devices folder.
- Plug the RS232 cable or USB cable between the PC and the PA970.
- Execute "Repllog.exe" from the PA970's Windows directory (if ActiveSync is setup to sync using the IrDA port on both PC and PA970).

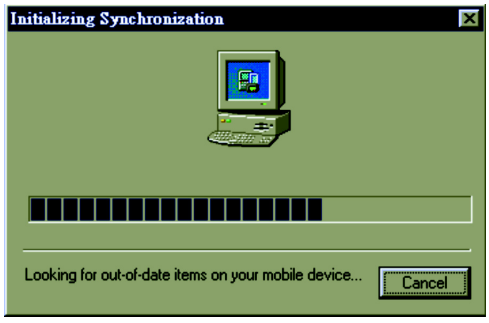
To turn on IrDA:

1. Click on the *Control Panel* icon on your PA970
2. Click the *PC Connection* tab
3. Tap the *Change Connection* button
4. Select IrDA

Synchronization will take place according to options you've chosen. To initiate synchronization manually, click *Tools*, and *Synchronize Now*.

Synchronization may take a few minutes, as each item to be synchronized needs to be processed. A message will be displayed indicating synchronization is taking place.

After synchronization, the status message in the status bar of the Mobile Devices windows will be displayed. Status can be checked at any time. Click the *Tools* menu, and click *ActiveSync Status* to display the ActiveSync Status window.



What Gets Synchronized

The following sections provide an overview of how various types of information are synchronized. For details on synchronizing specific items, refer to Microsoft ActiveSync Help.

Files

All files created on the PA970 are stored in the *My Document / PA970 My Documents* folder (assuming the assigned Device Name is PA970). View those files by double-clicking the short-cut *PA970 My Documents* icon on your desktop computer.

If you have enabled file synchronization, your PA970 files are automatically synchronized on your desktop computer file folder WinCE_PC My Documents - unless a different name was chosen for the PA970. This folder can be found in one of following locations:

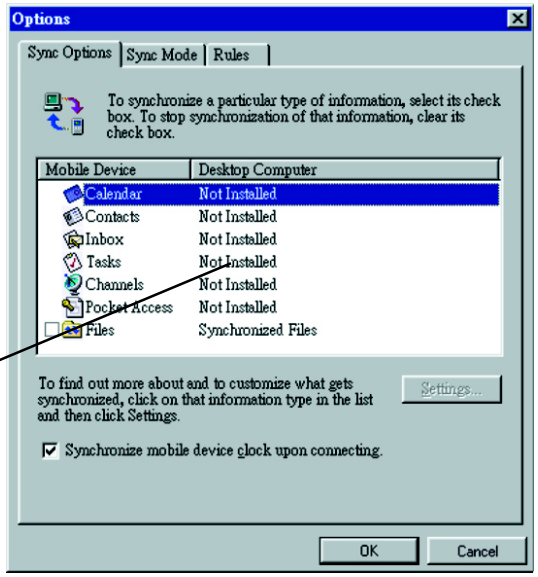
- **Windows 95 / 98 / 2000 / XP**: C:\Documents and Settings\ < user name> \ My Documents \ WindowsCE My Documents \.
- **Windows NT**: C:\ WINNT\ Profiles \ *your user-name* \ Personal \ WinCE_PC My Documents.

During synchronization, files are copied back and forth between the PA970 and the desktop computer.

Changing Synchronization Options

Synchronization options can be modified, including when you synchronize and what gets synchronized. In the Mobile Device window, click *Tools*, and then *Sync Options.*

For each type of information, the synchronization process can be hastened by limiting the amount of data to be synchronized. To do this, select a service and click the *Settings* button.



Inbox, Tasks, and Channels not supported

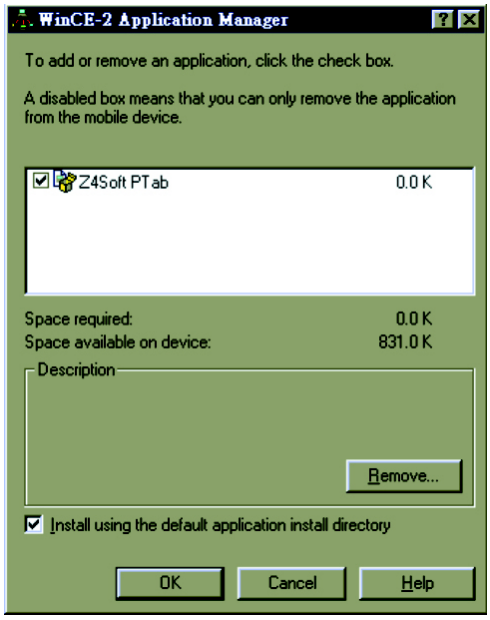
Note: The PA970 only supports File synchronization. Inbox, Channels, and Tasks are not supported. After enabling a service, you must close and reopen the ActiveSync Options dialog box before the Option button is available for that service.

Installing and Removing Software

Any program created for your PA970 can be installed as long as there is sufficient memory or storage space.

First install the software on your desktop computer and then connect the PA970 to your desktop computer. Some software programs provide their own setup instructions. Most software programs use Application Manager to install and remove software on the PA970. In the Mobile Device window, click *Tools*, and then click *Application Manager*.

- Application Manager detects the software that is available but not yet installed on the PA970.
- System software and programs added to the PA970 at the factory are stored in FlashROM. This software cannot be deleted or modified, and you'll never accidentally lose FlashROM contents.
- Software programs and data files added to your PA970 after factory installation can be stored temporarily in RAM or more permanently in Flash Memory.



InBox

Following is an overview of InBox. Step-by-Step information on how to use this program can be found in the Help function on the PA970. To view Help, tap *Start*, and then *Help*.

Sending and Receiving E-Mail with InBox

Use InBox to send and receive e-mail messages using any of these methods:

- Send and receive messages using a dial-up connection to a service provider or your corporate network.
- Send and receive messages using a wireless network card to a local area network (LAN).

Note: You can send and receive messages with Inbox, but this function cannot be synchronized with Outlook.

Sending Mail Remotely

In addition to exchanging mail messages with your desktop computer, you can send and receive mail from a remote mail server by setting up an e-mail account with a service provider.

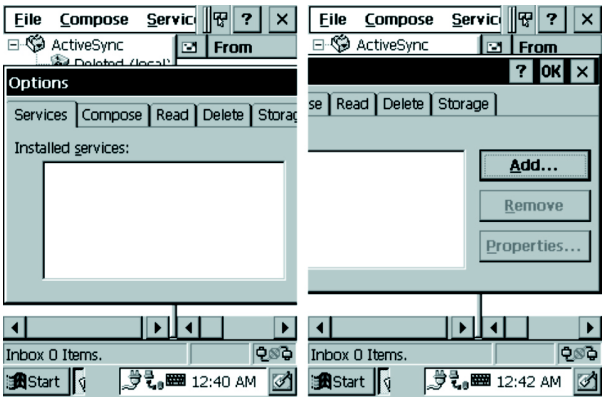
Note: If you're setting up an Internet mail account with an ISP (Internet Service Provider), the ISP must use a POP3 mail server and an SMTP mail gateway.

For dial-up connections, you'll require an internal PCMCIA type modem card or external modem for the PA970. You'll also need to set up the remote connection on the PA970 using the Connections program.

For wireless connections, you'll require an RF card for the PA970. You'll also need to set up the remote connection on the PA970 via the *Network* setting.

Setting Up Remote Mail

Multiple mail services can be utilized to obtain mail. For each mail service you will access, first set up and name each mail service. If using the same service to connect to different mailboxes, set up and name each mailbox connection.
In the InBox on the PA970, tap *Compose, Options*, the *Services tab*, and then the *Add* button.
A setup wizard will walk you through the steps.
The software for creating an Internet Mail connection to an ISP is pre-installed on the PA970.



Work Remotely

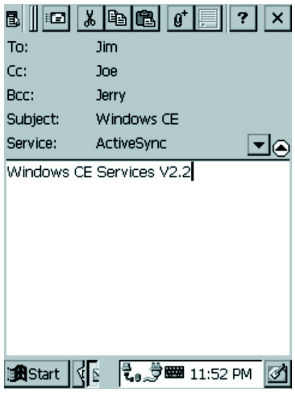
Mail received via dial-up connection appears in the InBox folder on the PA970, together with the mail you synchronize with your desktop computer. Messages received remotely are linked to your mail server rather than to your desktop computer.

You can work online, which means that you read and respond to messages while connected to the server. Messages are sent as soon as you tap *Send*, which saves space on your device.

You can also work offline. Once you've downloaded new message headers or partial messages, you can disconnect from the server and then decide which message to download completely. The next time you connect, InBox automatically downloads the complete messages you've marked for retrieval and sends the messages you've composed.

Receiving Messages

Messages received by synchronizing with your desktop computer and through remote connections appear together in your InBox. Double-tap a message to read it.



When you connect to your Internet mail service, the InBox downloads only the first 100 lines of each new message to the InBox folder by default. No mail attachments are downloaded. When you synchronize with your desktop computer, only the first 50 lines of each new message remains on the mail server or your desktop computer.

You can mark the messages that you want to retrieve in their entirety the next time you synchronize or connect to your mail service. Select the message, tap *Service*, and then tap *Retrieve Full Copy*. The icons in the InBox messages list give you a visual indication of the message status.

Specify your downloading preferences when setting up the service or selecting your synchronization options. You can change them at any time.

- **To change InBox delivery options for mail synchronization:** in the Mobile Devices window on your desktop computer select your WinCE icon, click *Tools*, and then click *ActiveSync Options*. Select *Message* and then click *Options*. (For the *Options* button to be available, you must have previously enabled message synchronization.)
- **To change InBox delivery options for remote mail:** in InBox on your PA970, tap *Service* and then tap the service name. Then tap *Service* again and tap *Properties*.

You'll need to download a full message before you can view its attachments.

Sending Messages

To compose a new message, tap the *New Message* button on the command bar. Enter an e-mail address in the *To* field or select a name from the Address Book. All e-mail addresses entered in the e-mail fields in Contacts appear in the Address Book.

To send your message, tap **File** and **Send**. Messages are placed in your OutBox folder on the PA970 and will be delivered to their destination in one of two ways:

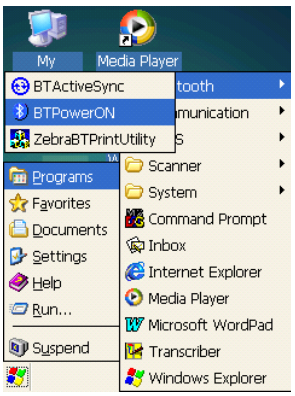
- They are transferred to the OutBox folder in Exchange or Outlook on your desktop computer the next time you synchronize.
- They are transmitted to your mail server the next time you connect remotely. In InBox, make sure the appropriate service is selected on the Service menu. Then tap *Connect*.

Wireless Communication

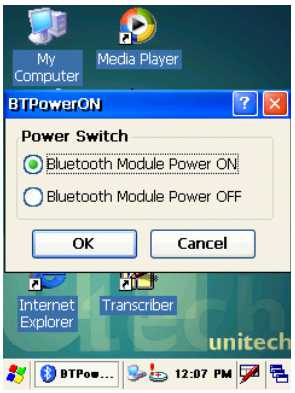
Your PA970 is equipped with Bluetooth, 802.11b, and GPRS modules for wireless communication.

Bluetooth Setup

Select the BTPowerON program from Wireless Connection on your PA970's Startup Bar.

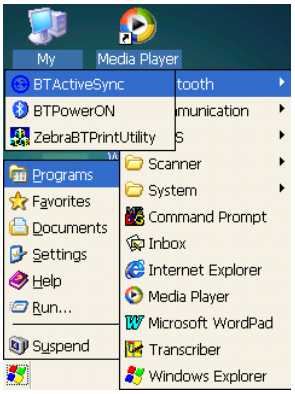


Select BTPowerON and tap OK.

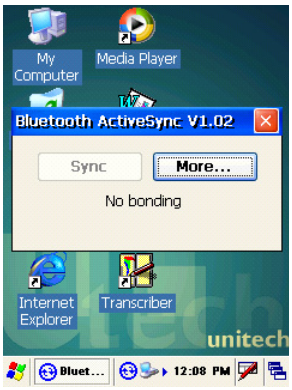


Bluetooth ActiveSync

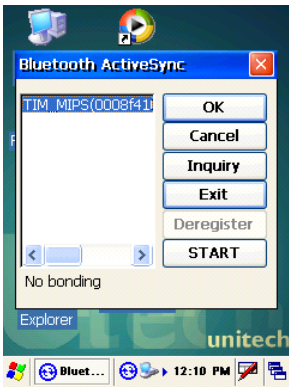
Select BTActiveSync from Communication on Startup bar.



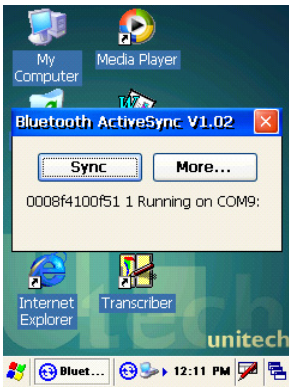
On your PC, tap the Bluetooth icon on the task bar. The screen to the right will appear. Select *More...*



Choose *Inquiry*. The inquiry process might take a few seconds. Then select the device to syncronize and tap OK.



Tap the Bluetooth icon on the task bar again. Click *Sync*.



"Connecting to Bluetooth" will appear on your screen.

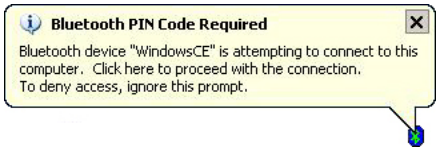
Select *My Bluetooth Places* from the popup box.

Select *Bluetooth Setup Wizard*.

In the resulting popup box select "I know the service that I want to use..." (or any similar phrasing).

Select (from somewhere) *BT Serial Port*. Click *Next*.

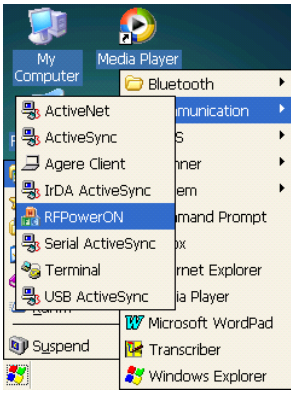
A Bluetooth Security screen will appear prompting you to enter a PIN code. This PIN Code can be any series of letters and numbers, and will be the same code you enter on your PA970 when prompted.


Bluetooth PIN Code Required
Bluetooth device "WindowsCE" is attempting to connect to this computer. Click here to proceed with the connection.
To deny access, ignore this prompt.

When prompted by your PA970, enter the same code that you'd entered on your PC. Once this is successfully entered, your synchronization is complete.

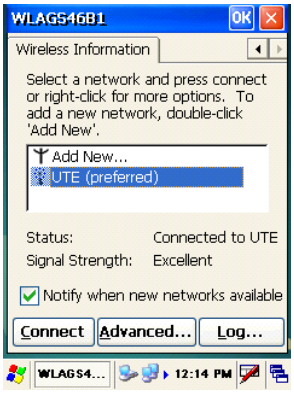
Power on 802.11b

Select RFPowerON and tap OK.



Select RF LAN Card Power ON and tap OK.

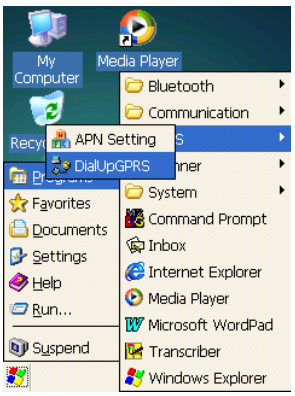
Select AP in the Wireless Information program.
Set Wireless properties.



Power on GPRS

Note: Power off the terminal before installing the SIM card.
Install the SIM card before you power on the GPRS.
After removing the battery cover and battery pack you will find the SIM card slot located inside the terminal beside the built-in Wireless.

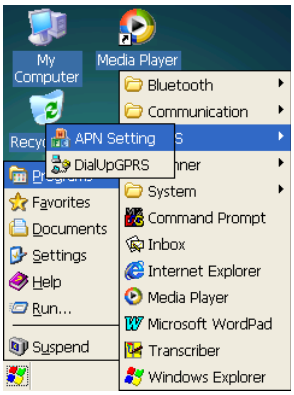
Select DialUpGPRS from the GPRS folder of Program files.



Select GPRS @ 115200 and tap OK.
When connected, tap *Hide*.

Note: It might take up to several minutes to get a GPRS connection depending on the local GPRS system.

The APN Default is “Internet”.
If your network provider does not use “Internet” as APN, please select the APN setting from the GPRS program files on the Startup bar to set APN.



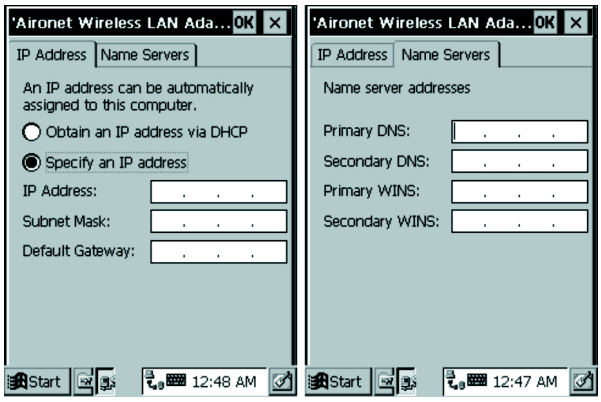
Obtaining an IP Address via DHCP Server

Please check with your MIS department to determine whether a DHCP server is available in your LAN environment. If available, tap the radio button *Obtain an IP address via DHCP*, and then tap the OK button.

Specifying an IP Address

If there is no DHCP server in your LAN environment, specify the individual IP address on each PA970 with the following steps:

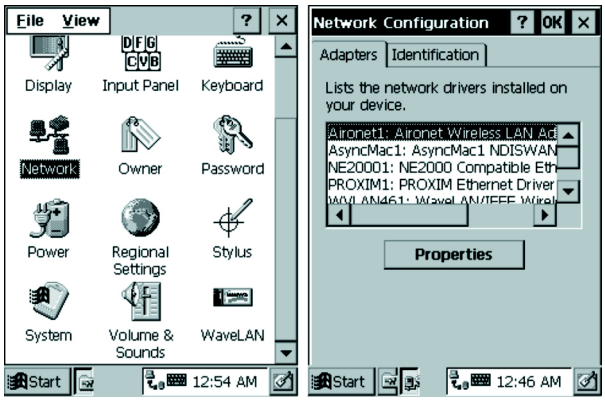
- Tap the radio button *Specify IP Address*
- Input the proper *IP address, Subnet Mask,* and *Default Gateway*
- Tap the *Name Servers* tab, and then input the proper *Primary DNS, Secondary DNS, Primary WINS,* and *Secondary WINS*



To avoid conflict with your LAN environment, please consult with your MIS department for the correct TCP/IP setting.

To change the above settings, please perform the following steps:

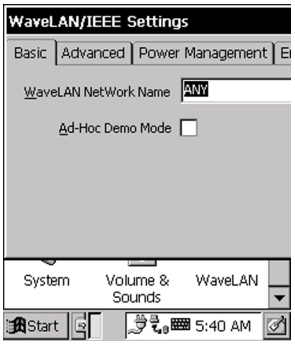
- Tap Start, Control Panel
- Double tap the Network icon
- Select the proper RF card driver and then tap the Properties button



How to Set SSID

Lucent WaveLAN (Agere Orinoco)

- Tap Start, Control Panel
- Double-click the WaveLAN icon
- Under the *Basic* tab, after *WaveLAN Network Name*, enter *SSID*. Tap OK



Cisco

- Tap Start. Run, Browse
- Select the Windows directory
- Select *Aironet Client Utility.exe*, Click OK, Click OK again
- Select *SSID*, Click OK

Cisco 350 Site Survey Tool:

The Unitech PA970 includes the Cisco 350 Site Survey Tool pre-loaded.

To access the Site Survey Tool:

1. Open *My Computer* (or use *File Explorer*)
2. Open the *Cisco* file folder
3. Open *Site Survey Tool*

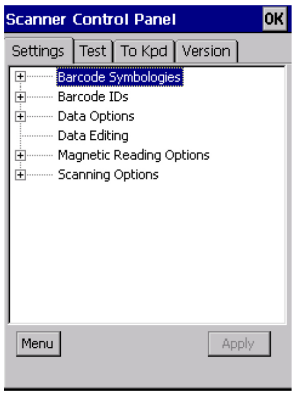
For more information on the Site Survey Tool, refer to the Cisco CE Manual.

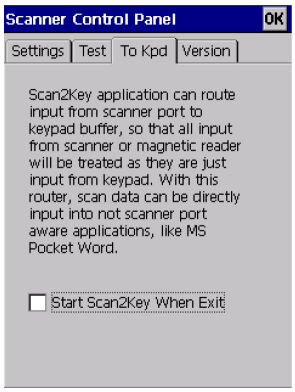
Or, go to: http://www.cisco.com/univercd/cc/td/doc/product/wireless/airo_350/350cards/win_ce/hig/ce_appe.htm.

Chapter 5. Bar Code Input Program

Scan2Key

The Scan2Key application can route input from a scanner port to keypad buffer, so that all input from the scanner will be treated as if they were input from the keypad.
With this router, scanned data can be directly input into applications like MS Pocket Word, Excel, etc.




Scanner Control Panel
OK
Settings
Test
To Kpd
Version
Scan2Key application can route input from scanner port to keypad buffer, so that all input from scanner or magnetic reader will be treated as they are just input from keypad. With this router, scan data can be directly input into not scanner port aware applications, like MS Pocket Word.
Start Scan2Key When Exit

Scanner Setting

When it is necessary for the user to change the default barcode symbology for a different application, *Scanner Control Panel* provides the ability to change default symbology, place delimiter characters behind scanned data, and save the settings.
Run this program from \ Windows \ Scanner Setting.exe and *Scanner Control Panel* will be displayed.

Bar Code Symbologies:

Set customization symbologies for each symbology including:

Symbology	Enable Disable	Send Check Digit	Max./Min Length	Send Leading Digit	Other
Code 39	Yes	Yes	Yes		Full ASCII Send Start/Stop Character
I 2 of 5	Yes	Yes	Yes		Send Start/Stop Character Fix Length
S25/Toshiba	Yes	Yes	Yes		Fix Length
Code 32	Yes				Send Leading Code Send Trailing Code
Telpen	Yes				Character Set
EAN 128	Yes				
Code 128	Yes		Yes		
MSI/Plessy	Yes	Yes	Yes		Check Digit Module
Code 93	Yes		Yes		
Code 11	Yes	Yes	Yes		One/Two Check Digit
CodaBar	Yes	Yes	Yes		Send Start/Stop Character CLSI Format On
Label Code	Yes	Yes			
UPC-A	Yes	Yes		Yes	
UPC-E	Yes	Yes		Yes	Zero Expansion On Enable NSC
EAN 13	Yes	Yes		Yes	Enable Bookland
EAN 8	Yes	Yes		Yes	
Delta Code	Yes	Yes			Calculate Check Digit
Supplement					Supplement 2 Supplement 5 Space Separator Inserted If Present, Transmit / Presence Required

Appendix A: Technical Specifications

CPU / Memory

CPU	Intel StrongARM 206MHz 32 CPU Built-in real-time clock 32MB for OS and application programs
Flash ROM	64MB Built-in (Flash Memory Manager included)
SDRAM	64MB

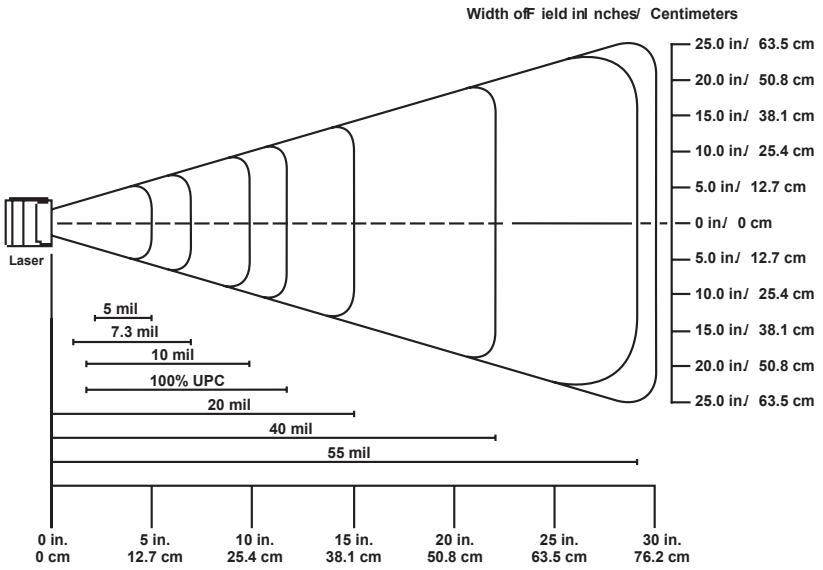
Input / Output

Input Devices	Touch screen, stylus, keypad, full alphanumeric software keyboard, mag stripe reader, and bar code scanner
Keypad	19 physical keys with backlight including cursor key, numeric keypad, alpha keypad,TAB, ESC, FUNC, brightness and contrast controls
Audio Output	A piezoelectric buzzer with software controlled volume
Display	240 x 320 pixels portrait type, 65535 Color LCDwith touch screen and Electroluminescent backlight Contrast adjustable by software hotkey
LED Indicator	Dual colors (green/red) for barcode good read indication

Scan Engine

Light Source	Visible Laser Dicode(VLD) 650nm
Scan Rate	39±Scans/Second
Scan Angle	±53° from vertical
Minimum Print Contrast	25% absolute dark/light reflectance at 650nm
Power Consumption	65mA typical @ 5V
Depth of Field	See next page

Laser Depth of Field



Typical Depth of Field in Inches/Centimeters

*Minimum distance determined by symbol length and scan angle

Note: Typical performance at 68°F (20° C) on high-quality symbols

Decode Zone

	Near	Far
5 mil	2.0 inches (5.1cm)	5.2 inches (13.2cm)
7.5 mil	1.7 inches (4.3cm)	8.0 inches (20.3cm)
10 mil	1.8 inches (4.6cm)	10 inches (25.4cm)
100% UPC	1.9 inches (4.8cm)	13 inches (33cm)
20 mil	*	20 inches (50.8cm)
40 mil	*	25 inches (63.5cm)
55 mil	*	30 inches (76.2cm)
* Dependant on symbol width		

Interface Port

RS232/USB/Charging Port — Power charging and EIA RS232C supports full duplex asynchronous communications and baud rate up to 115.2K bps

IrDA — Compliant to IrDA 1.2 (SIR)
Baud rate up to 115.2K bps

Wireless Communication — Via built-in Bluetooth, 802.11b, or GPRS

Power

Power Options	Lithium-Ion @7.4V, 1800mAH Main Battery Pack (Battery pack can be recharged 500 cycles or more) External AC/DC adapter @12VDC/2A with regulator
Power Consumption	Standby mode: 100mA Suspend mode: 5mA
Battery Charge	3 hours with external AC/DC adapter 3 hours with docking station
Backup Battery	1 rechargeable1.2V, 600mAH Ni-MH battery cell for data backup
Power Management	Power consumption indicated on status bar

Bar Code

Symbologies

Codabar	Code 128	MSI/Plessy
Code 11	Delta Code	Standard 2 of 5
Code 32	EAN-8, 13	Toshiba
Code 39	EAN128	Telpen
Code 39 Full ASCII	Interleaved 2 of 5	Toshiba
Code 93	Label Code	UPC-A, E

OS and Software Programming Tools

OS	Microsoft Windows CE.NET 4.2 Professional Plus
Development Language	Microsoft Embedded Visual Tool for VB and VC programming

Mechanical / Environmental

Dimensions	Length: 7.28” (18.5cm) Width: 3.49” (8.76cm) Depth: 1.70” (4.33cm)
Weight	15.59 oz. (442g) with battery pack
IP Rating	IP54
Temperature	Operation: 23°F to 122°F (-5°C to 50°C) Storage: -4°F to 140°F (-20°C to 60°C)
Humidity	5% to 95% RH non-condensing
Shock	Multiple 4.0’ (1.2m) drops to concrete

Docking Station

Interface 1 EIA RS232C IDC type connector via PC/computer, 1 USB port

Power Input 16 pin connector for charging and communication with host computer
AC/DC adapter @ 12 VDC/2A with regulator
Quick charging typically takes 3 hours

Pin Assignment for Charge / Communication Port

Pin	Assignment	Description
1	DCD	Data Carrier Detect
2	RXD	Receive Data
3	TXD	Send Data
4	DTR	Data Transmit Ready
5	SG	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator
10	USB 5VDC	USB 5VDC
11	12VDC	12VDC Input
12	NC	
13	NC	
14	GDN	Ground
15	UDC	USB Differential Data Signal High Side
16	/UDC	USB Differential Data Signal Low Side

Appendix B: Troubleshooting Guide

Problem	Solution
Terminal does not power on	Battery needs recharging or replacement Insure that the battery is installed correctly
Terminal turns itself off	Adjust “Power Properties” Battery needs recharging
Battery life is short	Adjust “Power Properties” - especially if peripherals are used Adjust backlight of LCD or Keypad Replace battery pack if old (battery can be recharged approximately 500 cycles)
“Low Backup Battery” message	Charge terminal for 16 hours
Screen is blank	Make sure the terminal is powered on Adjust screen brightness
Terminal either does not respond, or responds inaccurately to touch screen input.	Calibrate touch screen Perform a warm boot - **WARNING** - **Unsaved data will be lost** Perform a cold boot - **WARNING** - **Terminal will be reset to factory default settings and data will be lost**
Cannot read bar code	Make sure scanning application is loaded and operational Clean scanner window Run “Scanner Setting” program to modify barcode read setting Bar code might be distorted and should be replaced Battery needs recharging or replacement
Terminal will not shut off	If terminal is processing data, attach charging cable to insure the battery isn’t depleted If terminal is connected to AC power, disconnect Perform a warm boot - **WARNING** - **Unsaved data will be lost** Perform a cold boot - **WARNING** - **Terminal will be reset to factory default settings and data will be lost**
Terminal cannot communicate with host PC	Check settings on terminal (see page 27) Check settings on PC (see page 25) Make sure cable is tightly connected Try another cable Check to see if it works on another PC

FCC Statement

This is a FCC Part 15 Class B product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Canadian Compliance Statement

This Class B Digital apparatus meets all requirements of the Canadian Interferance-Causing Equipment Regulations.
Cet appareil numerique de la classe B respecte les exigences du Reglement sur le material broilleur du Canada.
The device is certified to the requirements of RSS-139-1 for 2.4 GHz spread spectrum devices.

European Conformity Statement

Declaration of Conformity with Regard to the R&TTE 1999/5/EC and EMC 89/336/EEC directives.

Laser Information

The Unitech PA970 is certified in the U.S. to conform to the requirements of DHHS/CDRH 21CFR Subchapter J and to the requirements of IEC 825-1. Class II and Class 2 products are not considered to be hazardous. The PA970 contains internally a Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits as set forth in the above regulations. The scanner is designed so that there is no human access to harmful laser light during normal operation, user maintenance or during prescribed service operations.

CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light. Use of optical instruments with the scanner will increase eye hazard. Optical instruments include binolulars, microscopes, and magnifying glasses. This does not include eye glasses worn by the user.

The laser safety warning label required by the DHHS/IEC for the PA970 series' optional laser scanner module is located on the memory compartment cover, on the back of the unit.

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